

Below is a list of signal tracing testpoints. During troubleshooting use this rule of thumb to determine whether to signal inject or signal trace:

Signal Trace- if the testpoint has an internally generated signal (which would be present whether or not an incoming RF signal is present).

Signal Inject- if the testpoint is part of the main path that incoming RF travels along on it's way towards becoming demodulated (converted back to original intelligence).

Note: The following special remarks apply to those testpoints with matching asterisks (see listing below).

- * Both J1 and J2 are a branch off of the same signal line and are therefore identical. The technical manual states that we use either J1 (see A12 section, first page) or J2 (see Main Chassis Interconnection section, pg. 9/10) depending on where you look. Sounds contradictory to us, but we didn't write it...! Good news is that the A3 assembly doesn't care where the 40Mhz comes from, as long as it gets it. So either connection should work for you.
- ** These testpoints will not be present in the AM mode (since no BFO output is generated in this mode).

Refer to block level handout to see where a testpoint is in circuit (to better understand it's significance in equipment operation). Refer to receiver technical manual's applicable section to locate physical location of testpoint.

Testpoints-

A21/A12J9-1	1Mhz	From A21
* A12 J1 or J2	40Mhz	To A3
A12 J6	1Mhz	To All
A12 J10	1Mhz	To A10
A3 P2	40Mhz	From A12
A11 P2	1Mhz	From A12
** A11J3	455Khz	To A5 & A18
** A5 P2	455Khz	From A11
** A18P2	455Khz	From A5
A10P3	1Mhz	From A12
A10A1P1	40.455Mhz (+Dial)	To A2
A2P3	40.455Mhz (+Dial)	From A10A1

End of Labs

Signal Tracing Lab

In this portion of the lab you will change from signal injection to signal *tracing*. You will hook up your probe to the oscilloscope now instead of the comms analyzer. Since it is assumed that by Unit 5 you have a solid understanding of signal tracing we will only discuss a few things which may be new to you in this unit.

While the electronic counter by itself should work well for signal tracing, we also suggest that if you do not see the frequency at a specific testpoint using the counter that you doublecheck that testpoint using your oscilloscope. Sometimes the amplitude of the signal is just below the threshold that the counter can pick up. Below are some particulars about each piece of test equipment. Choose your weapon...

Electronic Counter-

When using the electronic counter ensure your probe is set to x1 and that it is plugged into the 'Freq. Input' Jack. Also ensure that the front panel controls are set as follows:

Funtion- 'Freq'

Gate- '.01'

Atten- X1

Input Freq Range- High

For best results be sure to attach the probe ground lead to the chassis. You should be able to start checking the signal tracing testpoints listed below now.

Oscilloscope-

Essentially the oscilloscope we use in this class is the same as the one used in Unit Four. A few differences:

- 1) Autoset- Once you have touched a given testpoint you can press the Autoset button and the oscilloscope will automatically pick the best Volts/div and Time/div to give you a clear presentation of the detected signal. If no signal appears after pressing this button (assuming all else is set up correctly), it's a pretty safe bet that it is not present.
- 2) Cursors- The oscilloscope used in our class has the ability to give you a numerical display of the amplitude or frequency of a displayed signal. It is not totally automatic, however, and requires you to do some setting up. But it is a neat feature.
To use the cursors: Press 'Cursor' button. You should see text appear on o-scope screen. On righthand side of display you should see 'On' and 'Off' displayed. Press the button to the right of 'On'. At the bottom of the o-scope display there should be 4 options available. If you are measuring *frequency*, press the rightmost option which is 1/T (automatically does the inversion of time for you to come up with a freq. numerical display). Cursors will appear & be vertical (set to measure period). If you are measuring *voltage*, press the leftmost option which is Volts. Cursors will appear and be horizontal (set to measure amplitude). Important: Now you need to line up your cursors with the amplitude or period of the waveform (depending on what you are measuring). Hilited cursor is active cursor and can be moved using large knob to the right of the 'Toggle' button. Use 'Toggle' button to move other cursor. Once your cursors are lined up, read the numerical display (which represents the distance between the cursors) in the upper righthand section of the o-scope display.